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(12) **UK Patent Application** (19) **GB** (11) **2 147 484 A**

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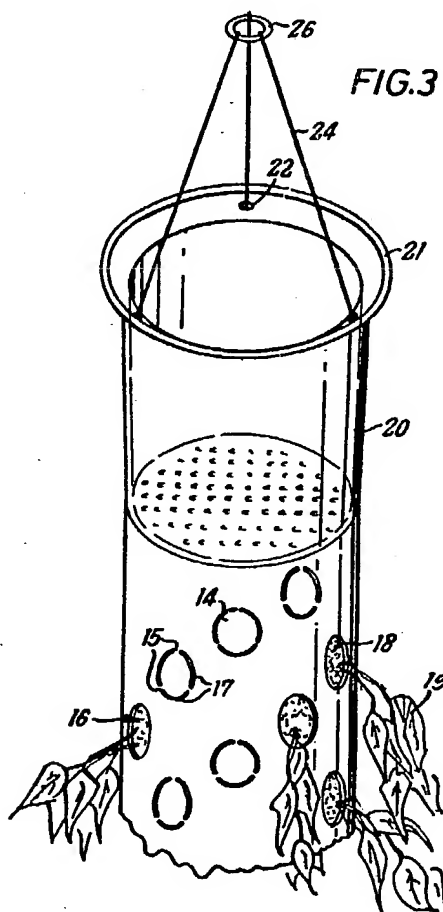
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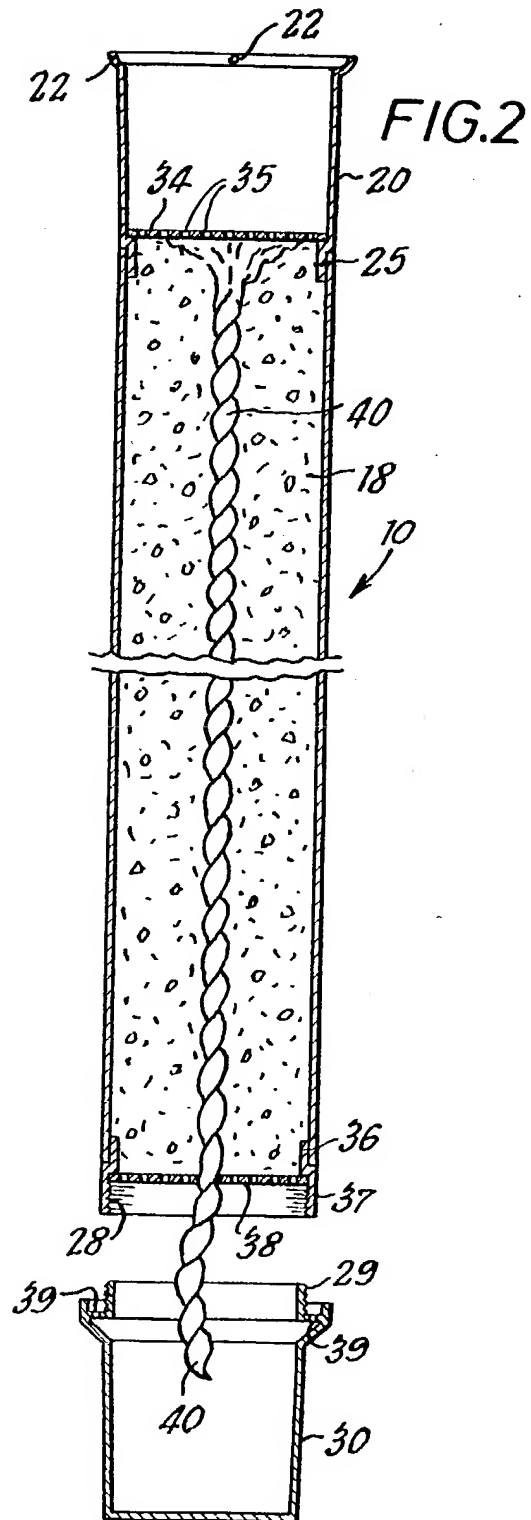
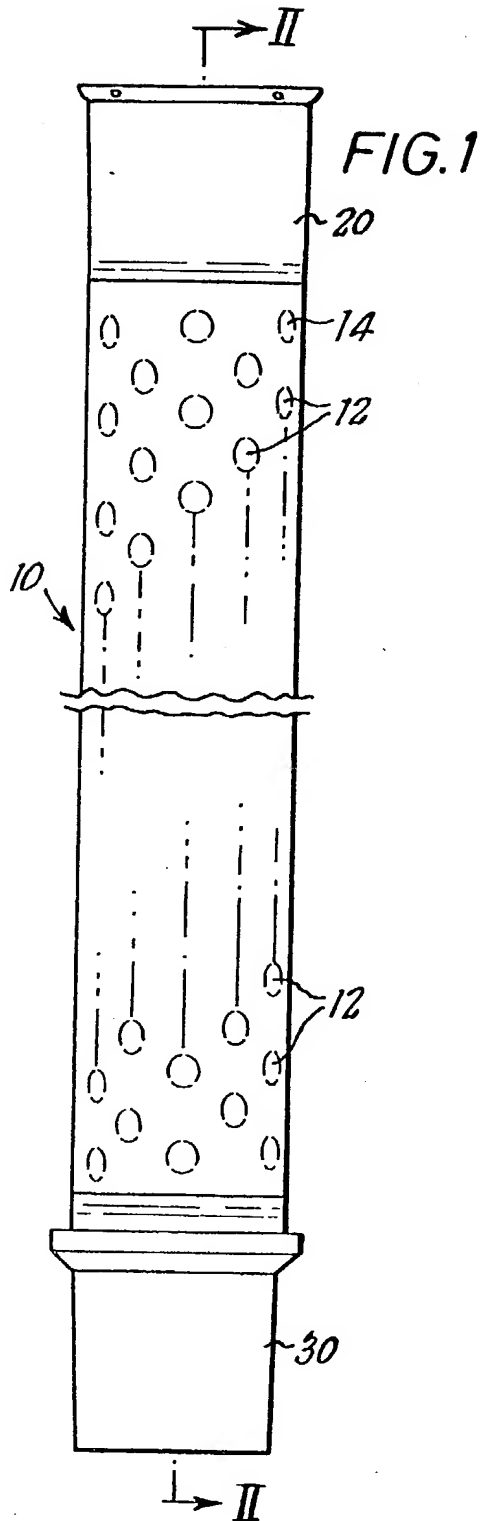
(58) Field of search
A1E

(54) **Containers for growing plants**

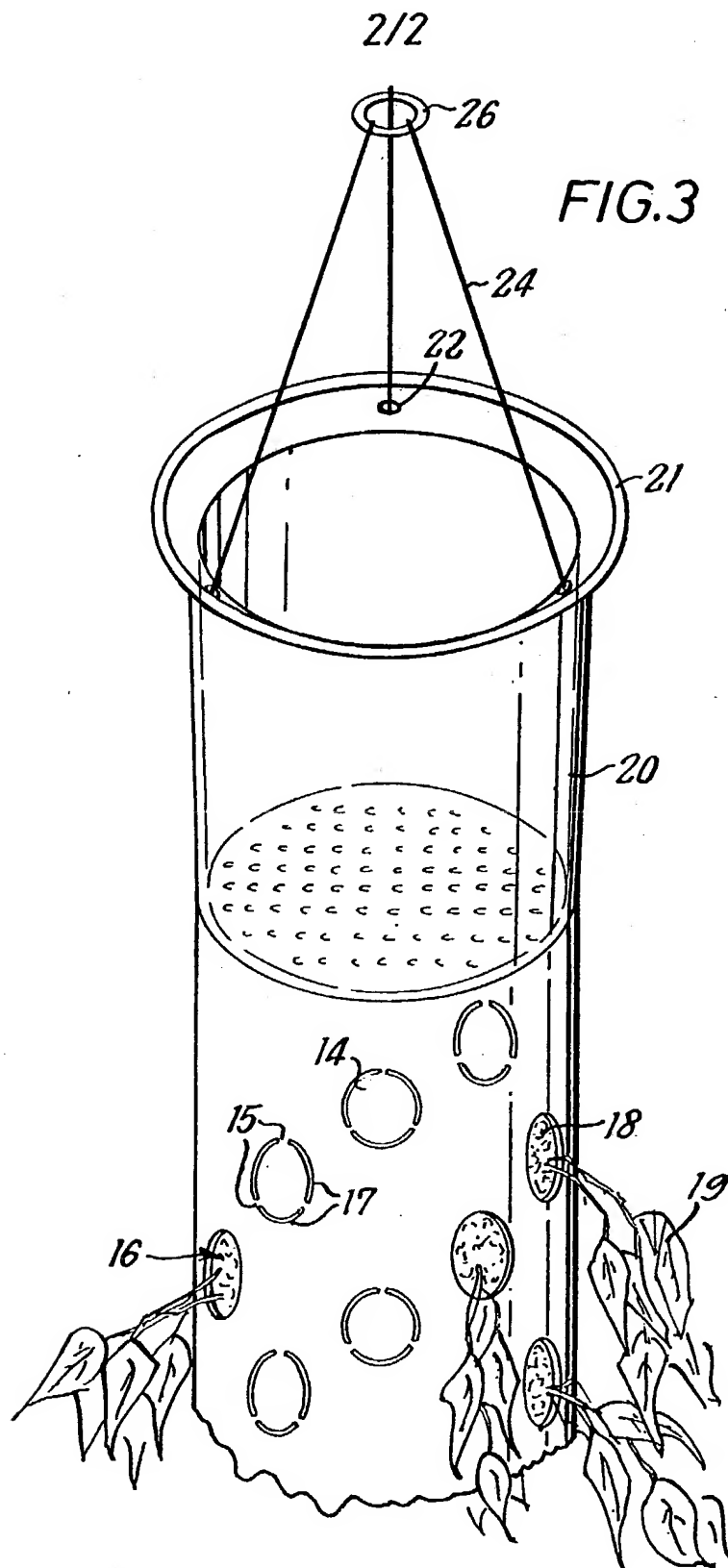
(57) A tubular planter comprises a rigid tubular body containing a growing medium (18) and is provided with means for supplying water and/or liquid nutrients to the growing medium. The tubular body has an outer wall provided with a plurality of preformed planting sites (16) for seeds, cuttings or seedlings (19). These planting sites are in the form of partially formed apertures, or apertures provided with removable closing means. In a preferred form, those planting sites are in the form of partially punched apertures with removable central portions (14) surrounded by arcuate perforations (17) and held in position by narrow tags (15). The planting sites can be broken open as desired, those not used being left closed.



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SPECIFICATION

Tubular planter

- 5 This invention relates to tubular planters of the type comprising a tubular body containing a growing medium and means for supplying water or a liquid fertiliser to the growing medium. In such planters, seedlings are inserted through the wall of the tubular body, or a hole is made in the wall to enable seeds to be planted.

- In one known type of tubular planter, the growing medium is enclosed in a tube of flexible sheet plastics material. The manufacture of the body of such planters is described in U.S. Patent 3 807 125. A disadvantage of the flexible sheet plastics material is that cuts or holes have to be made in the sheet material to enable seedlings to be inserted or seeds planted, using a sharp implement. In particular, when seeds are to be planted a lateral cut has to be made and a tooth pick or the like inserted into the cut to push back the wall sufficiently to expose a planting site. Such cuts in the wall of the planter inevitably weaken the overall structure since once any kind of perforation has been made the sheet material is liable to tear further. If a cut is too long, the weight of the planter body itself may start to enlarge the cut still further by tearing.

- The present invention provides a tubular planter comprising a rigid tubular body containing a growing medium, means being provided for supplying water and/or liquid nutrients to the growing medium, the tubular body having an outer wall provided with a plurality of preformed planting sites for seeds or seedlings, said planting sites being in the form of partially formed apertures or of apertures provided with removable closing means.

- The planter body is preferably made of a rigid material, suitably a rigid plastics material. Alternatively, it could be made from stout paper or other fibrous material, suitably coated at least on its inside with a water-proofing material such as a plastics coating or metal foil. A suitable rigid plastics material would be one derived from an acrylic resin, for example PERSPEX (Registered Trademark). Other materials which can be used include polyvinyl chloride (PVC), polystyrene or polyethylene.

- The planting sites are preferably in the form of partially punched holes having a central portion held in place by one, two or three radially extending tags left after the punching process so these can be broken, for example by pressing with a thumb, pencil or the like when it is desired to remove the central portion to expose a planting site. Alternatively, the planter body could be provided with preformed holes covered by removable closure means, for example strips of adhesive tape or other covering material which can be

stripped off as desired to expose particular planting sites.

- The growing medium can be of any conventional type but is preferably a soilless medium including a carrier such as perlite or expanded polystyrene granules and also including a rooting compound. Soil could also be used. Most of the required nutrients can be supplied in liquid form. Or mixed with the growing medium in the form of a powder or granular slow release fertiliser.

- The means for supplying the water and/or liquid nutrient preferably includes a central wick extending axially along the middle of the tubular body. One end of the wick extends into a liquid reservoir which may suitably be made detachable from the tubular body.

- The growing medium is preferably retained in the tubular body at one or both ends by a screen which is perforated to allow the passage of liquids but not of the growing medium.

- The planter of the invention is preferably arranged to stand or hang vertically, in which case it may have at its upper end a receptacle for water and liquid nutrients the bottom of which is provided by one of said perforated screens. The receptacle may conveniently be open so that it can be filled simply by means of a watering can, and need be no more than an extension of the tubular body itself. By filling the planter from the top, liquid can percolate through the screen and right down through the medium thus thoroughly soaking it. The medium can be prevented from drying out by means of the axial wick, which preferably projects from the bottom of the planter into a detachable receptacle which can also be refilled from time to time.

- A preferred embodiment of the invention will now be described with reference to the accompanying drawings wherein:

- Figure 1 is a partial side elevation of a tubular planter in accordance with the invention;

- Figure 2 is a cross-section taken on the line II-II in Figure 1 showing the liquid receptacle detached and Figure 3 is a perspective view of the upper end of the planter of Figure 1 when in use.

- Referring first to Figure 1, the tubular planter has a rigid tubular body (10) which can be cut from a continuous length of rigid tubular material, preferably a plastics material such as an acrylic resin or polyvinylchloride (PVC), which may be clear or opaque and of any desired colour.

- The tubular body is provided around its surface with a large number of preformed planting sites (12) in a regular array. The planting sites as shown in Figure 1 are closed off by central portions (14), as can best be seen in Figure 3.

- The preformed planting sites are formed by punching of one, two or three concentric

arcuate perforations (17) separated by tags (15) which hold the central portions in place. The planting sites may be opened manually as required, simply by pressing the central portion (14) with a thumb to break the tags (15).
 5 The portion (14) is then removed or remains inside the tube to expose a small area of access (16) to a growing medium (18) enclosed within the tube. Seeds or, as shown,
 10 seedlings or cuttings (19), can then be implanted.

The size of the planting sites is not critical, but from the point of view of ease of opening and retention of growing medium a size of 1
 15 to 2 cm is preferred.

At the upper end of the planter is a receptacle (20) which fits into the tubular body (10) by means of a shouldered portion (25) and can be secured in position by means of a
 20 suitable adhesive or other fastening means such as rivets. The shouldered portion (25) supports a perforated screen (34), the perforations (35) of which suitably have a diameter of about 1 mm.

Water and liquid nutrients can be supplied to the growing medium (18) enclosed in the tubular body of the planter simply by pouring it into the receptacle (20) and allowing it to percolate through the perforated screen (34)
 30 which extends right across the upper end of the planter. The liquid can thus soak the entire body of growing medium.

At the upper end of the receptacle (20) is a flared portion (21) provided with three holes
 35 (22) for supporting strings or wires (24) which are attached to a ring or hook (26) by which the planter can be hung.

At the lower end of the planter, the growing medium (18) is retained in the planter body
 40 by means of a perforated screen (38) mounted in an adaptor (37) which has a shouldered portion (36) by which it is secured to the cylindrical body (10) in much the same way as the shouldered portion of the receptacle
 45 (20).

The adaptor (37) has an internally threaded portion (28) into which can be screwed a correspondingly threaded portion (29) of a detachable liquid reservoir (30).

50 The screen (38) preferably has perforations of approximately 0.5 mm diameter. The upper liquid receptacle (20), the adaptor (37) and the liquid reservoir (30) may all suitably be made from a transparent plastics material
 55 such as perspex or another rigid acrylic plastics material.

Referring to Figure 2, a central wick (40) of fibrous material extends throughout the axial length of the tubular body (10), from a position immediately below the perforated screen (34), through the screen (38) and into the liquid reservoir (30).
 60

When water or a solution of liquid nutrients is poured into the upper receptacle (20), it
 65 percolates right through the growing medium

and at the same time soaks the wick (40). Eventually, it drains out through the screen (38) into the reservoir (30). This reservoir can also be filled directly by detaching it. When the reservoir is screwed into position, the water or liquid nutrient in it rises up the wick to ensure that the growing medium does not dry out. A number of holes (39) are provided in an annular channel around the upper portion of the reservoir (30), to allow water which may run out of the holes and down the side of the tube to flow into the reservoir (30) and also to allow air to replace water soaked up by the wick, thus avoiding the creation of a vacuum which would prevent further water from rising. There is thus provided a simple and effective means for keeping the growing medium (18) continuously supplied with water and nutrients. If the reservoir (30) is made
 85 transparent, it can be readily seen when more liquid needs to be added.

In another aspect the invention provides a tubular planter comprising a tubular body enclosing a growing medium, and means for
 90 supplying water and/or liquid nutrients to the growing medium including a rigid container formed at the upper end of the tube, the bottom of said container being formed as a perforated screen which also retains the growing medium in the tubular body.
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CLAIMS

1. A tubular planter comprising a rigid tubular body containing a growing medium, means being provided for supplying water and/or liquid nutrients to the growing medium, the tubular body having an outer wall provided with a plurality of preformed planting sites for seeds, cuttings or seedlings, said
 100 planting sites being in the form of partially formed apertures or apertures provided with removable closing means.

2. A tubular planter according to claim 1 wherein the preformed plantings sites are in the form of partially punched apertures with manually removable central portions or central portions which can be pushed in to the tube.

3. A tubular planter according to claim 2 wherein said central portions are surrounded by a one, two or more part-annular perforations and held in position by narrow connecting strips between the ends of said perforations.
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4. A tubular planter according to any preceding claim wherein the tubular body is made from a rigid plastics material.
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5. A tubular planter according to any preceding claim wherein the growing medium is a soilless medium.

6. A tubular planter according to any preceding claim wherein the means for supplying water or liquid fertiliser includes a central wick extending centrally through the planter body along substantially its whole length.
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7. A tubular planter according to claim 6
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having at one end a reservoir for water or liquid fertiliser, into which said wick extends.

8. A tubular planter according to any preceding claim wherein the planting medium is retained in the tubular body by screens at each end thereof, the screens being perforated to allow the passage of liquids but not of the growing medium.
- 5

9. A tubular planter according to claim 8 having at its upper end a receptacle for water or liquid fertiliser at its upper end, the bottom of the receptacle being formed by one of said perforated screens.
- 10

10. A tubular planter substantially as herein described with reference to and as illustrated in the accompanying drawings.
- 15

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